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Sheng Li

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SAP/BSTZ

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EXAMINER

JARRETT, SCOTT L

ART UNIT

PAPER NUMBER

3623

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/676,668	<b>Applicant(s)</b> LI ET AL.	
	<b>Examiner</b> SCOTT L. JARRETT	<b>Art Unit</b> 3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This Non-Final Office Action is in response to Applicant's amendments filed June 25, 2008. Applicant's amendment amended claims 1-14 and 22-32. Currently Claims 1-32 are pending.

This action has been made non-final in order to address a new ground of rejection under 35 U.S.C 101.

### ***Response to Amendment***

2. The 35 U.S.C. 112(2) rejection of claims 6 and 24 in the previous office action is withdrawn in response to Applicant's amendments to claims 6 and 24.

### ***Response to Arguments***

3. Applicant's arguments filed June 25, 2008 have been fully considered but they are not persuasive. Specifically, Applicant's argue that the prior art of record fails to teach or suggest 'calculating a weighting factor' as recited in independent claim 15 and newly amended independent claims 1, 4, and 22 (Remarks: Last Paragraph, Page 7, Paragraph 2, Page 8).

In response to Applicant's argument that the prior art of record fails to teach or suggest 'calculating' a weighting factor the examiner respectfully disagrees.

The phrase 'calculate' was given its plain meaning and its broadest reasonable interpretation consistent with the specification and consistent with the interpretation that

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those skilled in the art would reach. Specifically the phrase 'calculate' was interpreted to include any or all of the following definitions for the purpose of examination: to determine or ascertain by mathematical methods, compute, to determine by reasoning, common sense or practice experience, to make an estimate of, to suppose, to figure or the like.

It is noted that Applicant's specification discloses 'calculating a weighting factor' primarily in paragraphs 25, 32, 36, figures 4-5 and originally filed claim 15 wherein the specification does not provide a specific definition for the phrase calculate, a specific formula or algorithm for calculating the weighting factors or specific details to *how* the weighting factor is 'calculated'. The specification does provide example(s) of what the weighting factors can be (e.g. Figure 4 shows and Paragraph 26 discloses that the 'weighting factor' is simply a percentage of demand allocated/distributed to the plurality of subdivisions of a time period; as it taught by Landvater et al.: daily sales percentages; Column 4, Lines 63-68; Column 19, Lines 60-68; Column 20, Lines 1-16).

Landvater et al., teach a system and method comprising determining (inherently the weights, smoothing factors, overrides and the like are calculated, computed, reasoned, determined prior to being used otherwise no factor would be available to be used – the use of the weighting factors requires that the weighting factors have been or are calculated (determined) prior to their use) and a demand for a set of products for a plurality of subdivisions of time periods based on the weighting factor and historical demand, as evidenced by at least the following sections:

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- “Then, at step 174, daily forecasts are retrieved by multiplying the weekly forecasts by the override percentages rather than the normal daily percentages.”, Column 13, Lines 20-28 – i.e. the sales forecast is being weighted (adjusted) by the override percentages;
- using of ‘conventional algorithms’ for smoothing (Column 11, Lines 53-68; Column 12, Lines 41-55; – wherein smoothing algorithms by definition include a smoothing factor/constant that is used to weight the data in such a way as to produced smoothed data (less noisy, less disorderly) – see at least Wikipedia.org Exponential Smoothing definition; and
- user-defined weights, for which it is inherit that the weights were ‘calculated’ prior to being used, which are used to do such things as revise promotional forecasts (Column 19, Lines 60-68; Column 20, Lines 1-15).

Further it is noted that calculating a weighting factor (weight, smoothing constant, etc.) to be used in generating forecast based on the weighting factor and historical data is old and very well known; as evidenced by *at least* the following references:

- Fox et al., U.S. Patent No. 5,521,813 (Column 12, Lines 58-68; Column 14);
- Crosswhite, U.S. Patent no. 6,611,726 (Column 5, Lines 55-68)
- Li, U.S. Patent No. 7,028,000 (Column 1, Lines 43-48; Column 4, Lines 1-15; Column 9, Lines 18-23);
- Phillips et al., U.S. Patent No. 7,110,960 (Table 1, Column 9);

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- Leonard et al., U.S. Patent Publication No. 2003/0200134 (Paragraphs 23-26); and
- Ouimet, U.S. Patent Publication No. 2004/0049470 (Paragraphs 12, 55).

In response to applicant's Applicant(s) attempt at traversing the Official Notice findings as stated in the previous Office Action (Remarks: Paragraph 2, Page 9; Last Paragraph, Page 10) is inadequate. Adequate traversal is a two step process. First, Applicant(s) must state their traversal on the record. Second and in accordance with 37 C.F.R. 1.111(b) which requires Applicant(s) to specifically point out the supposed errors in the Office Action, Applicant(s) must state why the Official Notice statement(s) are not to be considered common knowledge or well known in the art.

In this application, while Applicant(s) have clearly met step (1), Applicant(s) have failed step (2) since they have failed to argue why the Official Notice statement(s) are not to be considered common knowledge or well known in the art. Because Applicant(s)' traversal is inadequate, the Official Notice statement(s) are taken to be admitted as prior art. See MPEP 2144.03.

Accordingly it has been established that it was old and well known in the art at the time of the invention to:

- invert (flip, inverse, etc.) one or more factors (weights, variables, parameters, etc.) is a common statistical and mathematical technique;
- to use smoothing other techniques in statistical analysis and/or forecasting; and

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- to separate (decompose, de-trend, removing noise, splitting, etc.) demand data into its various components, one of which is the base/baseline demand data.

The following references are provided as additional support for the previously established facts:

- Crosswhite, U.S. Patent no. 6,611,726 (decomposing sales forecast into its element/components: Holt-Winters: Column 7, Lines 13-18);
- Li, U.S. Patent No. 7,028,000 (estimating base sales volume – baseline and promotional demand components, promotion lift; Column 1, Lines 49-60; Column 3, Lines 1-10, 54-68); and
- Leonard et al., U.S. Patent Publication No. 2003/0200134 (Paragraphs 17, 21).

***Claim Rejections - 35 USC § 101***

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 4-14 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 4-14 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Based on Supreme Court precedent, a method/process claim must (1) be tied to another statutory class of invention (such as a particular apparatus) (see at least *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876)) or (2) transform underlying subject matter (such as an article or materials) to a different state or thing (see at least *Gottschalk v. Benson*, 409 U.S. 63, 71 (1972)).

A method/process claim that fails to meet one of the above requirements is not in compliance with the statutory requirements of 35 U.S.C. 101 for patent eligible subject matter. Here claims 4-14 fail to meet the above requirements because they are not tied to another statutory class of invention.

Nominal recitations of structure in an otherwise ineligible method fail to make the method a statutory process. See *Benson*, 409 U.S. at 71-72. As *Comiskey* recognized, "the mere use of the machine to collect data necessary for application of the mental process may not make the claim patentable subject matter." *Comiskey*, 499 F.3d at



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1380 (citing *In re Grams*, 888 F.2d 835, 839-40 (Fed. Cir.1989)). Incidental physical limitations, such as data gathering, field of use limitations, and post-solution activity are not enough to convert an abstract idea into a statutory process. In other words, nominal or token recitations of structure in a method claim do not convert an otherwise ineligible claim into an eligible one.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 1-5, 7-8, 10-23, 25-26 and 28-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Landvater, U.S. Patent No. 6,609,101.

Regarding Claims 1-3 Landvater teaches an apparatus comprising:

- a demand order module including a set of products to be shipped to a target location (Column 2, Lines 33-40; Column 8, Lines 4-25);
- a demand projection (forecast, estimation, prediction, etc.) module to calculate (determine) demand for the set of products of a plurality of subdivisions (periods, windows, slots, periods, segments, days, weeks, etc.) of a time period based on a weighting factor and historical demand data (Column 4, Lines 53-68; Column 11, Lines 53-68; Column 13, Lines 5-29; Column 19, Lines 48-68; Column 20, Lines 1-20);
- a processing device to executing a demand projections module (Column 7, Lines 34-50; Figures 1-4); and
- a storage device with a data structure to store the demand projection module and actual demand data for the time period (Column 7, Lines 34-50; Figures 1-4, 8).

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Regarding Claims 4 and 22 Landvater teaches a system and method comprising:

- forecasting a total demand for a time period (Column 4, Lines 1-34, 53-68; Column 8, Lines 63-68; Column 9, Lines 1-10);
- calculating (determining) a weighting factor for a plurality of subdivisions of the time period (Column 11, Lines 53-68; Column 13, Lines 2—29; Column 19, Lines 37-68; Column 20, Lines 1-20); and
- projecting future demand, during the time period, for a subdivision based on the weighting factor and historical demand data (Column 11, Lines 53-68; Column 13, Lines 2—29; Column 19, Lines 37-68; Column 20, Lines 1-20).

Regarding Claims 5 and 23 Landvater teaches a system and method further comprising initializing the weighting factor to an equal value for each subdivision (Column 19, Lines 37-68; Column 20, Lines 1-20).

Regarding Claims 7 and 25 Landvater teaches a system and method further comprising multiplying total demand by the weighting factor and a ratio (percentage, fraction, etc.) of actual demand and forecast demand (Column 11, Lines 53-68; Column 12, Lines 41-68; Column 13, Lines 1-29; Column 19, Lines 40-68; Figure 12).

Regarding Claims 8, 17 and 26 Landvater teaches a system and method further comprising adjusting future demand forecast based on an out-of-stock (shortfall,

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shortage, stock out) calculation (e.g. safety stock to avoid a stock-out/shortage; Column 3, Lines 40-48; Column 14, Lines 23-58).

Regarding Claims 10, 19 and 28 Landvater teaches a system and method wherein the smoothing factor biases the weight factor in relation to historical demand (Column 4, Lines 53-68; Column 11, Lines 53-68; Column 12; Figure 11).

Regarding Claims 11 and 29 Landvater teaches a system and method further comprising selecting one or a forecast demand and a projected demand based on a threshold (target, benchmark, required, set, tolerances, etc.) value (Column 11, Lines 25-31; Column 18, Lines 3-14; Column 19, Lines 50-65; Column 20, Lines 17-20).

Regarding Claims 12 and 30 Landvater teaches a system and method wherein the threshold value is a ratio of cumulative sales data and cumulative forecast data for a subdivision of the time period (e.g. override percentages; Column 18, Lines 3-14; Column 19, Lines 50-65; Column 20, Lines 17-20).

Regarding Claims 13 and 31 Landvater teaches a system and method wherein the projected future demand is utilized when a minimum amount of historical data is received (Column 19, Lines 37-65).

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Regarding Claims 14 and 32 Landvater teaches a system and method further comprising filtering historical demand data to remove statistical outliers (abnormal demands; Column 12, Lines 35-40).

Regarding Claim 16 Landvater teaches an apparatus comprising:

- means for calculating a weighting factor (Column 11, Lines 53-68; Column 13, Lines 5-29; Column 19, Lines 55-68; Column 20, Lines 1-15);
- means for calculating forecasted and projected demand (Figure 1);
- means for dynamically updating the project demand based on additional demand data (Column 19, Lines 20-68; Column 20, Lines 1-15).

Regarding Claim 18 Landvater teaches an apparatus further comprising means for adjusting the weighting factor based on additional demand data (Column 11, Lines 53-68; Column 13, Lines 5-29; Column 19, Lines 55-68; Column 20, Lines 1-15);

Regarding Claim 20 Landvater teaches an apparatus further comprising outputting the project demand to a transportation route determination module (Column 23, Lines 20-30).

Regarding Claim 21 Landvater teaches an apparatus further comprising means for receiving demand data (Figures 1-4).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 6 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Landvater, U.S. Patent No. 6,609,1 as applied to claims 1-5, 7-8, 10-23, 25-26 and 28-32 above.

Regarding Claims 6 and 24 Landvater teaches a system and method further comprising:

- applying a smoothing factor to new demand data to produce a first result (Column 4, Lines 53-68; Column 11, Lines 52-68; Column 12, Lines 35-68; Figure 11);
- aggregating a new demand data for the time period (Column 11, Lines 52-68; Column 12, Lines 35-68; Figure 11); and
- applying an smoothing factor to a previous weighting factor to generate a second result (Column 11, Lines 52-68; Column 12, Lines 35-68; Figure 11); and
- adding the first and second results (Column 11, Lines 52-68; Column 12, Lines 35-68; Figure 11).

While there are a plurality of commonly used and well known smoothing techniques (factors, weights, functions, algorithms, etc.) utilized in forecasting and

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statistical analysis Landvater does not expressly teach that the applied smoothing factor is an *inverted* smoothing factor as claimed.

Official notice is taken that inverting (flipping, inversion, etc.) one or more factors (weights, variables, parameters, etc.) is a common statistical and mathematical technique. Further official notice is taken that smoothing (using smoothing factors or other techniques) in statistical analysis and/or forecasting is old and very well known wherein the goal is to “smooth” a data set in order to create a function that attempts to capture important patterns in the data, while leaving out noise.

It would have been obvious to one skilled in the art at the time of the invention that the system and method as taught by Landvater with its utilization of well known smoothing techniques/algorithms would have utilized any of a plurality of well known smoothing approaches including but not limited to an inverted smoothing factor in view of the teachings of official notice; the resultant system/method capturing important patterns in the data, while leaving out noise.

Regarding Claims 9 and 27 Landvater teaches a system and method further comprising account for the effects of promotions on baseline (non-promotional periods, demand data (Column 2, Lines 10-27; Column 5, Lines 7-16, 38-48; Column 17, Lines 5-24; Figure 19).

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Landvater does not expressly teach *separating* demand data between promotion and baseline demand as claimed.

Official notice is taken the separating (decomposing, de-trending, removing noise, splitting, etc.) demand data into its various components, one of which is the base/baseline demand data, is old and very well known (see for example Makridakis et al., Forecasting Methods and Applications, Section 3/1, Pages 84-87; Figure 3-1) wherein separating base demand from the aggregated/overall demand (e.g. promoted demand) is key to establishing a meaningful base forecast or more to the point segments (filters) out exogenous factors (e.g., price effects, promotions, etc.) from base demand history, and defines a better baseline forecast.

It would have been obvious to one skilled in the art at the time of the invention that the system and method as taught by Landvater with its ability to account for promotional, holiday and seasonal effects on demand would have benefited from separating demand data between promotion and baseline demand in view of the teachings of official notice; the resultant system and method enabling the forecaster to generate a more accurate baseline demand.



### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- AutoBox 5.0 – User's Guide (1999), teaches a commercially system and method for forecasting utilizing a plurality of well known forecasting methods, techniques and algorithms including but not limited to weighting forecasts using an inverse (inverted) weighting factor (Page 33).

- Knolmayer et al., Supply Chain Management Based on SAP Systems (2002) teaches a commercially available system and method for supply chain management including order management, demand planning (Section 3.1.2, Pages 120-129) and calculating and utilizing weighting factors to generate forecasts (Step b - Page 127).

- Espasa, The Decomposition of Forecast in Seasonal ARIMA Models (1995) decomposition (break down) of a forecast into is seasonal (transitory) and baseline (permanent) components.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SCOTT L. JARRETT whose telephone number is (571)272-7033. The examiner can normally be reached on Monday-Friday, 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boswell Beth can be reached on (571) 272-6737. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Scott L Jarrett/  
Primary Examiner, Art Unit 3623